Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1.   (Original) An image processing apparatus for performing an image quality improving processing of an image, comprising:

a domain block extracting section for extracting a domain block image from an original image in the unit of a first block unit;

a range block extracting section for extracting a range block image from the original image in the unit of a second block unit which is larger than the first block unit with respect to the domain block image;

a reduced range block forming section for reducing the extracted range block image to the size of the first block unit; and

an improved domain block forming section for performing a pixel value conversion with respect to the reduced range block image formed by the reduced range block forming section, and for outputting the pixel-value-converted reduced range block image as an improved domain block image.

2.   (Original) The image processing apparatus according to claim 1, further comprising:

a similarity degree judging section for judging a similarity degree between the domain block image and the reduced range block image by the reduced range block forming section, wherein

the improved domain block forming section performs the pixel value conversion based upon the similarity degree obtained by the similarity degree judging section.

3.   (Original) The image processing apparatus according to claim 2, further comprising:

a domain block classifying section for classifying a sort of the domain block image extracted by the domain block extracting section, wherein

the domain block image other than the domain block image which has been classified to a previously determined sort is directly outputted as the improved domain block image.

4.　　(Original)　The image processing apparatus according to claim 3, wherein

the domain block classifying section classifies the domain block image to a flat portion, a step edge portion, a noise portion, and a texture portion based upon both standard deviation and a concave/convex degree of the domain block image.

5.　　(Original)　The image processing apparatus according to claim 4, wherein

the range block extracting section extracts a range block image from the original image in the second block unit larger than the first block unit with respect to the domain block image which has been classified to the step edge portion by the domain block classifying section.

6.　　(Original)　The image processing apparatus according to claim 4, wherein

the range block extracting section extracts a range block image from the original image in the second block unit larger than the first block unit with respect to the domain block image which has been classified to the noise portion by the domain block classifying section.

7.　　(Original)　The image processing apparatus according to claim 4, wherein

the range block extracting section extracts a range block image from the original image in the second block unit larger than the first block unit with respect to the domain block image which has been classified to the step edge portion, or the noise portion by the domain block classifying section.

8.　　(Original)　The image processing apparatus according to claim 2, wherein

the range block extracting section extracts the range block image which contains the domain block image extracted by the domain block extracting section as the range block image.

9.   (Currently Amended) The image processing apparatus according to claim 2, ~~wherein:~~wherein

the range block extracting section extracts a plurality of the range block images with respect to one of the domain block images;

the reduced range block forming section executes a reducing processing as to the plurality of range block images; and

the similarity degree judging section selects a reduced range block image which is judged as the image having the highest similarity degree with respect to the domain block image among a plurality of the reduced range block images.

10.   (Original) The image processing apparatus according to claim 9, wherein

when a pixel value "z" of the reduced range block image is least-squares-approximated to the pixel value of the domain block image by a linear transformation "az + b", the similarity degree judging section judges the reduced range block image having the smallest least squares error as a most resemblant reduced range block image having the highest similarity degree.

11.   (Original) The image processing apparatus according to claim 10, wherein

the improved domain block forming section forms the improved domain block image in such a way that the pixel value of the most resemblant reduced range block image is converted by the linear transformation "az + b" with employment of least squares coefficients "a" and "b", which correspond to the most resemblant reduced range block image obtained by the similarity degree judging section.

12.   (Original) The image processing apparatus according to claim 2, further comprising:

an edge emphasizing section for executing an edge enhancement processing with respect to the improved domain block image based upon both a relationship between a maximum value and a minimum value of the pixel values within the improved domain block images, and an edge degree of the improved domain block image.

13.   (Original) The image processing apparatus according to claim 4, further comprising:

an edge emphasizing section for executing an edge enhancement processing with respect to the improved domain block image based upon both a relationship between a maximum value and a minimum value of the pixel values within the improved domain block images, and an edge degree of the improved domain block image, wherein

the edge emphasizing section executes the edge enhancement processing only for the improved domain block image which corresponds to the domain block image classified to the step edge portion by the domain block classifying section.

14.   (Original) The image processing apparatus according to claim 12, wherein

the edge emphasizing section calculates an averaged pixel value as to both the maximum pixel value and the minimum pixel value within the improved domain block image, converts a pixel value larger than the averaged pixel value into a larger pixel value in response to a distance between the own pixel value and the averaged pixel value, and also converts a pixel value smaller than the averaged pixel value into a smaller pixel value in response to a distance between the own pixel value and the averaged pixel value in accordance with a strength of an edge enhancement.

15.   (Original) The image processing apparatus according to claim 14, wherein

the strength of the edge enhancement employed in the edge emphasizing section is set in such a manner that when a standard deviation value of the pixel values contained in the domain block image is small, the strength is made strong, whereas when a standard deviation value of the pixel values is large, the strength is made weak.

16.   (Original) The image processing apparatus according to claim 2, further comprising comprising:

an averaged value calculating section for calculating an average value with respect to pixels where a plurality of the improved domain block images are overlapped with each other, wherein

the domain block extracting section extracts the domain block image in such a manner that the domain block image owns a cover portion on the original image.

17.   (Currently Amended) The image processing apparatus according to claim 2, wherein: wherein

the original image corresponds to a color image; and

the range block extracting section extracts the range block images from relatively same positions as to the respective color components of the original image.

18.   (Original) An image processing method for performing an image quality improving processing of an image, comprising:

extracting a domain block image from an original image in the unit of a first block unit;

extracting a range block image from the original image in the unit of a second block unit larger than the first block unit with respect to the domain block image;

reducing a size of the extracted range block image to the size of the first block unit;

judging a similarity degree between the reduced range block image and the domain block image; and

forming an improved domain block image based upon a result obtained by converting pixel values as to the reduced range block image based upon the similarity degree.

19.   (Original) The image processing method according to claim 18, further comprising:

classifying a sort of the domain block image extracted from the original image; and

outputting the domain block image other than the domain block image which has been classified to a previously-determined sort as the improved domain block image.

20.   (Currently Amended) The image processing method according to claim 19, ~~wherein:~~wherein

~~The~~the classifying of a sort of the domain block image classifies the domain block image to a flat portion, a step edge portion, a noise portion, and a texture portion based upon both standard deviation and a concave/convex degree of the domain block image.

21.   (Currently Amended) The image processing method according to claim 20, ~~wherein:~~wherein

the extracting of the range block image is performed when the domain block image is classified to a step edge portion.

22.   (Currently Amended) The image processing method according to claim 20, ~~wherein:~~wherein

the extracting of the range block image is performed when the domain block image is classified to a noise portion.

23.   (Currently Amended) The image processing method according to claim 20, ~~wherein:~~wherein

-15-

the extracting of the range block image is performed when the domain block image is classified to one of a step edge portion and a noise portion.

24.   (Currently Amended) The image processing method according to claim 18, ~~wherein:~~wherein

the extracting of the range block image is performed in such a manner that the range block image contains the domain block image.

25.   (Currently Amended) The image processing method according to claim 18, ~~wherein:~~wherein

when the range block image is extracted, a plurality of the range block images are extracted with respect to one of the domain block images;

a reducing processing is performed as to the plurality of range block images respectively; and

a reduced range block image is selected which is judged as the image having the highest similarity degree with respect to the domain block image among a plurality of the reduced range block images.

26.   (Currently Amended) The image processing method according to claim 25, ~~wherein:~~wherein

when a pixel value "z" of the reduced range block image is least-squares-approximated to the pixel value of the domain block image by a linear transformation "az + b", the similarity degree judging processing is performed in such a manner that the reduced range block image having the smallest least squares error is judged as a most resemblant reduced range block image having the highest similarity degree.

27.   (Currently Amended) The image processing method according to claim 26, ~~wherein:~~wherein

a pixel value converting processing executed when the improved domain block image is formed is performed in such a manner that the pixel value of the most resemblant reduced range block image is converted by the linear transformation "az + b" with employment of least squares coefficients "a" and "b", which correspond to the most resemblant reduced range block image obtained by the similarity degree judging section.

28.   (Original) The image processing method according to claim 18, further comprising:

performing an edge enhancement processing with respect to the improved domain block image based upon both a relationship between a maximum value and a minimum value of the pixel values within the improved domain block images, and an edge degree of the improved domain block image.

29.   (Currently Amended) The image processing method according to claim 20, ~~wherein:~~wherein

when the sort of the domain block image is classified to the step edge portion, an edge enhancement processing is performed with respect to the improved domain block image based upon both a relationship between a maximum value and a minimum value of the pixel values within the improved domain block images, and an edge degree of the improved domain block image only for the improved domain block image which corresponds to the domain block image.

30.   (Currently Amended) The image processing method according to claim 28, ~~wherein:~~wherein

the edge enhancement processing calculates an averaged pixel value as to both the maximum pixel value and the minimum pixel value within the improved domain block image, converts a pixel value larger than the averaged pixel value into a larger pixel value in response to a distance between the own pixel value and the averaged pixel value, and also

-17-

converts a pixel value smaller than the averaged pixel value into a smaller pixel value in response to a distance between the own pixel value and the averaged pixel value in accordance with a strength of an edge enhancement.

31.   (Currently Amended) The image processing method according to claim 30, ~~wherein:~~wherein

the strength of the edge enhancement employed in the edge enhancement processing is set in such a manner that when a standard deviation value of the pixel values contained in the domain block image is small, the strength is made strong, whereas when a standard deviation value of the pixel values is large, the strength is made weak.

32.   (Currently Amended) The image processing method according to claim 18, ~~wherein:~~wherein

the domain block image is extracted in such a manner that the domain block image owns a cover portion on the original image, when the domain block image is extracted; and

a calculation is made of an average value with respect to pixels where a plurality of the improved domain block images are overlapped with each other and correspond to the respective domain block images so as to determined a final pixel value.

33.   (Currently Amended) The image processing method according to claim 18, ~~wherein:~~wherein

the original image corresponds to a color image; and

the range block images are extracted from relatively same positions as to the respective color components of the original image.

34.   (Canceled)

35.   (Original) A computer-readable storage medium storing a program for causing a computer to execute an image processing comprising:

-18-

extracting a domain block image from an original image in the unit of a first block unit;

extracting a range block image from the original image in the unit of a second block unit larger than the first block unit with respect to the domain block image;

reducing a size of the extracted range block image to the size of the first block unit;

judging a similarity degree between the reduced range block image and the domain block image; and

forming an improved domain block image based upon a result obtained by converting pixel values as to the reduced range block image based upon the similarity degree.